

Mirage

LED system

- Over 65000 colours
- No power pack required
- Dimmable
- Downlighter, truss mounting, and hanging brackets available
- Terminal block input and output connectors
- DMX control (remote control available)
- Extruded Aluminium case
- No moving parts
- Low heat generation
- Long lamp life
- Works from 110V to 240V mains supply with no adjustment.

IMPORTANT

Installer and Users please note:

These instructions should be read carefully and left with the user of the product for future reference.

INSTALLATION.

The Mirage must be installed by a competent electrician in accordance with the current IEE Wiring Regulations.

Refer to the instruction supplied with the fixing brackets when fitting the lighting heads.

Connections.

Remove the three screws from the front of the Mirage, and remove the front plate, along with the LEDs and circuit boards. Pass the mains and DMX cables through the grommets on the back panel, and fix the Mirage housing into place using the screws provided with the fixing brackets.

Connections are made by two-part terminal blocks. The loose part (supplied in the bag with this user guide) is connected to the cables, and then plugged into the part fixed to the circuit board.

Connect the mains to the larger three-way terminal block - refer to the marking on the circuit board to ensure that wires are connected to the correct terminals - EARTH is the centre terminal. The power consumption of the Mirage is only 21W so up to 50 Mirages can be connected to one 5 Amp lighting circuit.

Connect the DMX to the smaller 4-way terminal block - refer to the marking on the circuit board to ensure that wires are connected to the correct terminals.

The DMX should be wired as a daisy-chain - connect Data+ on the first Mirage to Data+ on the second, to Data+ on the third, connect Data- on the first Mirage to Data- on the second, to Data- on the third, connect OV on the first Mirage to OV on the second, to OV on the third etc. using screened twisted pair cable (Screen goes to OV).

A DMX line termination resistor (120Ω $\frac{1}{4}W$) should be connected across the Data+ and Data- terminals on the LAST Mirage only.

Up to 32 Mirages may be connected to one controller.

A +12V supply is available to power controllers that have no built-in power supply (For example, Mirage CC2). This should only be connected between the first Mirage and the controller.

DO NOT CONNECT the +12V terminal to other Mirages.

Alternatively, if the Mains earth and the DMX cables follow a similar route, then the DMX OV terminal may be left disconnected and unscreened twisted pair cable for the Data. Twin twisted pair (such as telephone cable) should be used to connect the Mirage to a controller, using one pair for the DMX DATA+ and DATA-, and the other pair for +12V and OV

Setting the DIL switches

There are two DMX modes available: MX90 mode and 3-channel mode.

Mode switch OFF = MX90 mode = more channels, more features

Mode switch ON = 3-channel mode = fewer channels, fewer features.

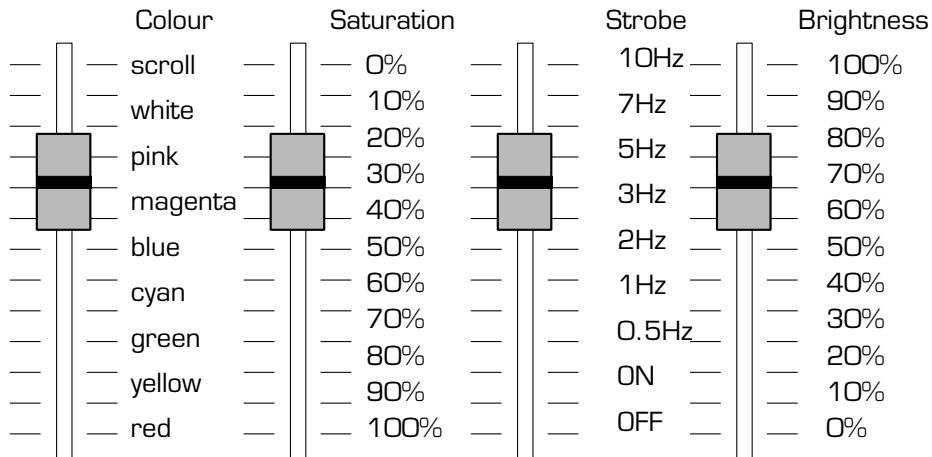
MX90 mode.

This refers to the new 8-channel protocol which will be incorporated into all new NJD luminaires and controllers. Select MX90 mode if you are using an MX90-compatible controller, or the SFC1 DMX remote controller, or if you are using a Merlin or other DMX lighting control desk and wish to access features such as flashing or colour scrolling. Set the "mode" switch **OFF**.

NJD's MX90 protocol uses 8 DMX channels for every product. The allocation of the channels is consistent throughout all products complying with the protocol. This protocol will be used on all future products and controllers.

The channels are:

Channel 1:	x-position (pan) or dish rotation
Channel 2:	y-position (tilt)
Channel 3:	colour (plus colour scrolling)
Channel 4:	gobo or colour saturation
Channel 5:	speed
Channel 6:	strobe/blackout
Channel 7:	gobo rotation
Channel 8:	brightness.



On the Mirage only the channels marked in bold are used (the third, fourth, sixth and eighth above the DMX address set on the DIL switches)

This mode can be used from a controller such as the Merlin, in order to access the automatic colour scrolling and flashing. Alternatively, the *DMX 3-channel mode* (see page 5) uses fewer channels, and if flashing or colour scrolling were required, it could be written as a program in the Merlin.

The colour is continuously variable: for example, orange will be found mid-way between red and yellow, and purple between blue and magenta.

The saturation control allows every pastel shade between the deepest possible colour ("fully saturated") and white to be selected.

To set up the Mirage, set the saturation control to zero, then set the brightness to the level required, and then set the colour. If a paler shade of the colour is required, increase the saturation control as required.

If operating from a controller, refer to the instructions supplied with the controller regarding how to set the address switches. The following information may be useful.

Lantern numbers are 8 DMX addresses apart.

Lantern number	DMX address	Switches on (all other switches off)
1	1	none
2	9	8
3	17	16
4	25	8, 16
5	33	32
6	41	32, 8
7	49	32, 16
8	57	32, 16, 8
9	65	64
10	73	64, 8
11	81	64, 16
12	89	64, 16, 8
13	97	64, 32
14	105	64, 32, 8
15	113	64, 32, 16
16	121	64, 32, 16, 8

DMX 3-channel mode

DMX mode allows the Mirage to be controlled from a general-purpose DMX controller such as the Merlin using the least number of channels. Set the mode switch ON for DMX mode.

To set a DMX address, add up the numbers of all the switches that are ON and add 1 to give the DMX address. For instance to set DMX address 41, set switch 32 on and switch 8 on, and all other switches off: $32+8+1 = 41$.

The Brightness will then be controlled by DMX Channel 42

The Colour will then be controlled by DMX Channel 43

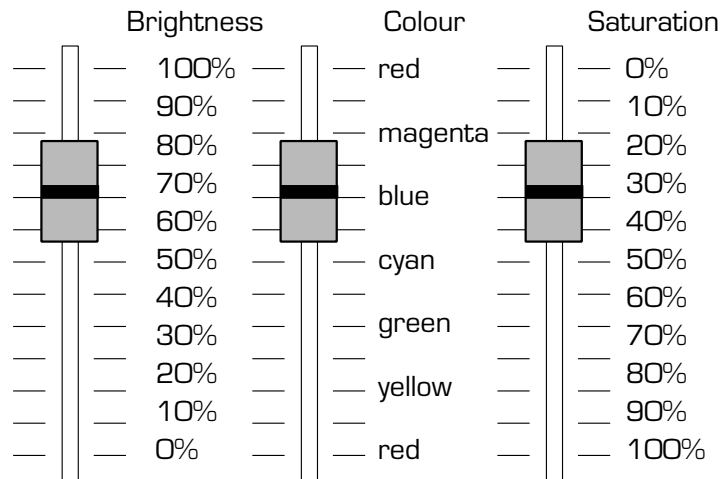
The Saturation will then be controlled by DMX Channel 44

In 3-channel mode, the sliders operate the Mirage as follows:

The colour is continuously variable: for example, orange will be found mid-way between red and yellow, and purple between blue and magenta.

The saturation control allows every pastel shade between the deepest possible colour ("fully saturated") and white to be selected. To set up the Mirage, set the saturation control to zero, then set the brightness to the level required, and then set the colour. If a paler shade of the colour is required, increase the saturation control as required.

See drawing on following page.



DMX remote control (Mirage CC2).

The Mirage CC2 is the recommended remote control for the Mirage.

Set the DIL switches as follows: (Set the MODE switch ON)

Lantern number	DMX address	Switches on (all other switches off)
1	1	none
2	5	4
3	9	8
4	17	4, 8

Standalone modes

Two standalone modes are available, for applications when no control is required, or for testing. In both modes, brightness is maximum, and the colours are fully saturated.

1. Change colour at random.

Set the **MODE** switch, and DMX address switches 256, 128, 64, 32, 16, 8 and 4 **ON**.

Using switches 2 and 1, the speed of change can be set as follows:

Switch 2	Switch 1	Time
OFF	OFF	5 seconds
OFF	ON	25 seconds
ON	OFF	2 minutes
ON	ON	10 minutes

2. Colour scroll

Set the **MODE** switch **OFF**, and DMX address switches 256, 128, 64, 32, 16 and 8 **ON**

Using switches 4, 2 and 1 the speed of scroll can be set as follows:

Switch 4	Switch 2	Switch 1	Speed
OFF	OFF	OFF	5 minutes
OFF	OFF	ON	4.5 minutes
OFF	ON	OFF	3.5 minutes
OFF	ON	ON	3 minutes
ON	OFF	OFF	2 minutes
ON	OFF	ON	80 seconds
ON	ON	OFF	40 seconds
ON	ON	ON	10 seconds

The "speed" is the time taken to complete one cycle, from red, through green and blue and back to red again.

Technical Specification

Dimensions: 127mm x 121mm x 110mm

Weight: 0.65kg

Chromaticity co-ordinates:

Red: 0.698,0.296

Green: 0.246,0.686

Blue: 0.128,0.153

and all intermediate shades

Connections: Terminal blocks

Power supply: 110-240V AC 50-60Hz

Power: 21W (all LEDs lit)

Standards

The Mirage complies with:

EN60598 Part.1 (Luminaires - electrical safety)

EN55015 (Electromagnetic compatibility)

Guarantee

This product is guaranteed for a period of 12 months against faulty components or manufacture from the date of purchase. Upon proof of purchase, NJD shall, at its own option, repair or replace the defective item at no cost to the purchaser.

This guarantee is contingent upon the proper use of the product in the application for which it is intended and does not cover products that have been modified, subjected to unusual physical conditions, or electrical conditions outside its specification, or damaged in any way.

This guarantee is limited to the product only and does not cover carriage costs, installation costs or travel expenses. Your statutory rights are not affected.

In the event of any problems with this product contact the retailer from which it was purchased for technical assistance, or e-mail technical@njd.co.uk

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